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Researchers study impact of medicinal plant's harvest in San Juan National Forest

By Ann Bond Special to the Herald
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National forests supply Americans with many natural resources – timber, livestock forage, minerals, energy – and increasingly, medicinal plants. Although native plants have been harvested for centuries by Native American tribes for medicinal purposes in North America, the modern herbal industry has increased the pressure on some species.

One of the medicinal plants found on the San Juan National Forest is osha (*Ligusticum porteri*), a slow-growing, perennial member of the parsley family. Osha is found in the southern Rocky Mountains and Sierra Madre between 7,000 and 11,000 feet. Large roots, typically from plants at least 10 years old, are favored as an herbal remedy.

“Osha has many traditional uses,” said Regi Black Elk of the Oglala Lakota Nation in South Dakota. “It is used for upper respiratory infections. You can chew the root for a sore throat, and it aids in treating colds.”

Black Elk, a senior studying American Indian Studies at Haskell Indian Nations University in Lawrence, Kansas, was high atop Missionary Ridge north of Durango last month helping collect data for a research project on the impacts of root harvest on osha populations.



Regi Black Elk, left, a student at Haskell Indian Nations University, and Courtney Masterson, a student at the University of Kansas, place flags to mark immature, mature and flowering osha plants in a research plot on Missionary Ridge.



A tiny osha sprout grows from roots left over from earlier harvest in a research plot on Missionary Ridge.

“This work is hard but beneficial, especially if the Forest Service uses it to work with native tribes to save medicinal plants for future generations,” said Black Elk as he climbed over downed logs searching for osha sprouts and seedlings to flag amid dense vegetation.

The collaborative effort is spearheaded by Kelly Kindscher, senior scientist and environmental studies professor at the University of Kansas. His diverse research group includes college students and representatives from United Plant Savers, a national nonprofit, which lists osha as a species at risk from over-harvest, and the American Herbal Products Association, an industry group that promotes responsible commerce of herbal products.

“The Forest Service faces the challenge of managing the harvest of medicinal plants in a sustainable manner, so they will be available for traditional and cultural purposes into the future,” said Gretchen Fitzgerald, a forester who oversees permits for medicinal plant harvest on the San Juan National Forest. “Research like this will help us obtain biological information to inform our decisions.”

Sixty plots were established in areas where osha grows naturally on the Rio Grande and San Juan national forests. To add diversity, locations included an open meadow and beetle-killed forest in the Cumbres Pass area, and the burned area of the Missionary Ridge Fire.

“In some plots, we harvested 100 percent of the flowering plants and/or those mature enough to flower,” Kindscher said. “In others, we harvested one-third or two-thirds each year. In the control patches, we didn’t harvest at all. Now, three years later, we see some flowering plants in all of the plots.”

All those involved in the study say their intent is to ensure an abundance of medicinal plants on public lands. It takes osha three to five years to grow into its flowering reproductive stage. While it is resilient as a rhizome that can grow from its roots and also produce seeds, its vulnerability comes from its limited range, slow growth and the fact that its roots are dug up during harvest. Additionally, osha has not been cultivated commercially because its germination rates are low, and it is very slow growing.

“We’re not asking for a moratorium on the use of native plants. Rather, we want to preserve these important species,” said Susan Leopold of United Plant Savers. “I’d love to see the creation of botanical sanctuaries to protect biodiversity for medicinal and native species and harvest areas set up to engage people with their public lands.”



Amy Isenberg of the University of Kansas prepares to flag a mature Osha plant in a plot on Missionary Ridge as part of a research project to gather data on the native species’ ability to regenerate after harvest



Daniel Gagnon, left, Owner of Herbs, Etc. in Santa Fe, and Maggie Riggs, a volunteer from Lawrence, Kansas, monitor the results of a three-year study on Missionary Ridge to determine the impacts of harvest on Osha regeneration.

Leopold says that protecting osha habitat will also protect other medicinal species in the Rocky Mountains, such as baneberry, arnica, yarrow and others.

Daniel Gagnon, who owns the Santa Fe shop, Herbs, Etc., participated in the study as a representative of the American Herbal Products Association.

“We all need to work together to teach people how to harvest in a sustainable fashion,” Gagnon said. “We’d like to see the allocation of certain areas to certain pickers under permit and monitor the results.”

Kindscher said he expects to submit the results of his research for publication within a year.

“We feel we have enough data now to put forth a



Daniel Gagnon, left, Owner of Herbs Etc. in Santa Fe, and Maggie Riggs, a volunteer from Lawrence, Kansas, prepare to plant flags to mark the levels of Osha regeneration in study plots on Missionary Ridge

proposed rate of sustainable harvest for osha to be considered by the public land agencies, industry and others,” Kindscher said.

In the meantime, the San Juan National Forest will have no program for commercial harvest of osha until the results of the research offer enough information about how best to manage harvest of this important plant.

“Free permits are required to collect small amounts of osha root for personal use,” Fitzgerald said.

“Participating in the permit process allows us to keep track of which areas are being harvested and to offer harvesting tips for sustainable practices.”



A smiling Susan Leopold of United Plant Savers helps the University of Kansas research crew monitor the rates of regeneration of Osha in plots established on Missionary Ridge.



Osha, a native plant known for its medicinal properties, is the subject of a three-year study on its ability to regenerate after harvest pressure

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